

I claim:

1. A device for detecting calcium containing endospores comprising: a reaction vessel, a chemiluminescent liquid, said chemiluminescent liquid contained within said vessel, a spectrometer, said spectrometer positioned proximate said reaction vessel whereby calcium containing endospores directed into said vessel will react with said chemiluminescent liquid for detection by said spectrometer.
2. The device of claim 1 wherein said reaction vessel comprises a glass container.
3. The device of claim 1 wherein said chemiluminescent liquid comprises aequorin.
4. The device of claim 1 wherein said chemiluminescent liquid comprises a calcium chelating agent.
5. The device of claim 4 wherein said calcium chelating agent comprises ethylenediamine tetraacetate, tetrasodium salt.
6. The device of claim 3 wherein said aequorin is naturally occurring extracted from jellyfish.

7. The device of claim 1 wherein said chemiluminescent liquid comprises aequorin dissolved in an ethylenediamine tetraacetate buffer solution.
8. The device of claim 1 wherein said spectrometer comprises a liquid scintillator spectrometer.
9. The device of claim 1 wherein said spectrometer comprises a pair of photomultipliers.
10. The device of claim 1 further comprising an air pump, an air intake conduit, said air pump connected to said air intake conduit, said intake conduit in communication with said reaction vessel.
11. The device of claim 10 wherein said intake conduit has a diameter of 4mm.
12. The device of claim 10 wherein said air pump forces air through said intake conduit at approximately 12.5 liters per minute.
13. A device for detecting calcium containing endospores comprising: a reaction vessel, an intake conduit, said intake conduit in fluid communication with said reaction vessel, an air pump, said air pump mounted proximate said intake conduit for forcing air through, said intake conduit and into said reaction vessel, a

liquid scintillation spectrometer, said liquid scintillation spectrometer proximate said reaction vessel, said scintillation spectrometer comprising a pair of photomultipliers, a ratemeter, said photomultiplier in electric communication with said ratemeter, a chart recorder, said chart recorder in electrical communication with said ratemeter, a printer, said printer in electrical communication with said chart recorder, a chemiluminescent liquid, said chemiluminescent liquid comprising aequorin, a chelating agent, said chelating agent mixed with said aequorin, whereby endospores containing calcium forced by said air pump into said vessel will react with said aequorin to generate a light pulse for detection by said liquid scintillation spectrometer.

14. The device of claim 13 wherein said chelating agent comprises ethylenediamine tetraacetate, tetrasodium salt.
15. A method of detecting calcium containing endospores comprising the steps of:
  - a) directing calcium containing endospores into a chemiluminescent liquid;
    - i) chelating the calcium of said endospores; and

- ii) reacting the chelated calcium to produce a light pulse; and
  - b) detecting the generated light.
16. The method of claim 15 wherein detecting calcium-containing endospores comprises the step of detecting endospores of the Bacillus genera.
17. The method of claim 15 wherein detecting calcium-containing endospores comprises the step of detecting endospores of the Clostridium genera.
18. The method of claim 16 wherein detecting Bacillus genera endospores comprises the step of detecting endospores of the species Bacillus anthracis.
19. The method of claim 15 wherein chelating the calcium comprises the step of chelating the calcium with ethylenediamine tetraacetate.
20. The method of claim 15 wherein reacting the chelated calcium comprises the step of reacting the calcium with aequorin.